Engineering Data

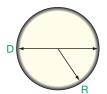
Area and Volume Formulas

Circle

$$D = 2R$$

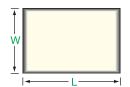
$$C = 2\pi R = \pi D$$

$$A = \pi R^2 = \frac{\pi D^2}{4}$$



Rectangle

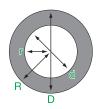
$$A = L \times W$$



Circular Ring

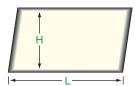
$$A = \pi (R^2 - r^2)$$

= 0.7854 (D² - d²)



Parallelogram

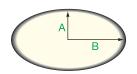
$$A = L \times H$$



Ellipse

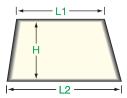
$$A = \pi \times A \times B$$

$$C = \pi \sqrt{2(A^2 + B^2)}$$



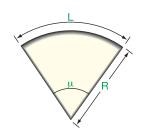
Trapezoid

$$A = \frac{(L1 + L2) H}{2}$$



Sector

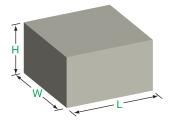
$$A = \frac{\pi R^2 \propto}{360} = \frac{RL}{2}$$
$$L = \frac{\pi R \propto}{180} = \frac{2A}{R}$$



Rectangular Solid

$$A = 2 (WL + LH + HW)$$

$$V = W \times L \times H$$



Sphere

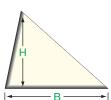
$$A = 4\pi R^2$$

$$V = \frac{4\pi R^3}{3}$$



Triangle

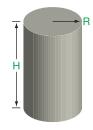
$$A = \frac{B \times H}{2}$$



Cylinder

$$A = 2\pi R (R + H)$$

$$V = \pi R^2 H$$



Hexagon

$$S = R = 1.155r$$

 $A = 2.598 S^2$
 $= 3.464 r^2$



Cone

$$A = \pi R \sqrt{(R^2 + H^2)}$$

$$V = \frac{\pi R^2 H}{3}$$



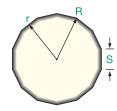
\mathbf{A} = Area

$$V = Volume$$

 $\pi = 3.1416$

Regular Polygon

$$A = \frac{NSr}{2} = \frac{NS}{2} \sqrt{R2 - \frac{S^2}{4}}$$



- **D** = Diameter
- N = Number of sides
- **S** = Length of side
- \propto = Angle